

Work Order ID 57351

Tuesday, April 06, 2010 8:23:05 AM



Page 1

Item ID: D3391-013

Accept



Setup Start



Revision ID:

Stop



Item Name: Mid Tube Assembly

Start Date: 4/6/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 4/20/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan: MF

Date: 10-4-6

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D3391

Rev H

100

0.00



Skidtubes

Skidtubes

0.00

Memo

1-Cut tube to finish length as per Dwg D3391

2-Identify as D3391-013

3-Drill pilot holes using DT8796 (including "B" holes) and drill only 1 fwd saddle hole on one side only as per Dwg D3391

4-Open saddles and GHW holes to Ø0.375" except for fwd saddle hole of detail "J"

5-Remove .030" from Fwd indexing Ridge as per Dwg D3391

6-Remove indexing ridge on Fwd & Aft end of skidtube as per Dwg D3391

7-Deburr

8-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.250" holes with paint marker,

9-Open wearplate holes of D3391-013 assembly detail section G-G to Ø0.250" (14 holes) as per Dwg D3391 and 2 holes in section Detail "J", do not open wearplate holes of section "J"

10-Open wearplate holes of D3391-013 assembly detail section H-H to Ø0.297" (20 holes) as per Dwg D3391

11 6/4/6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

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Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

11-Open .375" holes to .438" ***do not open fwd saddle holes***

K10/4/16

12- Locate electric step holes 41.5000" from fwd end and drill using DT 8393

13-Locate D3391-021 in D3391-023 at 9.00" (see view z-z)

14- Transfer drill one fwd saddle hole only to .188" dia, transfer drill all remaining fwd saddle holes using DT 8149 locating from previously drill .188" dia hole, using t-pins and clicos to ensure perfect allingment, open up previously tranfer drilled pilot holes in D3391-013/-011 to 0.438" dia. in D3391-011

K10/4/12

15- Transfer drill 2 wearplate holes into D3391-011 using DT8217, locating from two previously drilled holes, drill remaining wearplate holes into D3391-011.

16- Locating from two fwd wearplate holes drill remaining 6 wearplate holes in D3391-011 using DT8937

17- Open 2 fwd wearplate holes in D3391-013 to .250" dia.

18- counterbore two aft wearplate holes in D3391-011 as per dwg

19- Open 12 wearplate holes in D3391-011 to 0.297" dia.

20- Deburr and blow out all chips from inside tube

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Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

110



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

8/10/04/13

0.00

Memo

(K)

120



HandFinish

Hand Finishing

Chemical Conversion Coat per QSI005 4.1

0.00

Memo

0.00

A 4/10/4/14

130



QC

Quality Control

QC3- Inspect Part Finish

0.00

Memo

0.00

(1)

2E10/04/15

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140 	Skidtubes	0.00							
Skidtubes	Memo	0.00							
Skidtubes	Bond web in place as per Dwg D3391 & QSI 015. *****Ensure Web Aligment ***** B# 112429 Exp 10/8/30								
150 	QC5- Inspect part completeness to step on W/O	0.00							
QC	Memo	0.00							
Quality Control	Inspect each insert using DT8821								

1 10/14/15

8/10/15

XP

W/O:		WORK ORDER CHANGES					
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160



Skidtubes

Skidtubes

Skidtubes

Memo

0.00

1-Weld crossbolt spacer as per dwg D3391 & QSI 004

A/R M112860

BE 10/05/04

2-grind weld flush

BE 10/05/04

3- Transfer drill electric step pilot holes only from D3391-013 into D3391-015

4- Open electric step holes 0.391" per dwg D3391 (section L-L)

5- Open electric step holes 0.297" per dwg D3391 (section M-M)

6- Open electric step holes 0.250" per dwg D3391 (section LL-LL)

[Handwritten signature]

11-4-26

170



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

[Handwritten signature]

[Handwritten mark]

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Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180 QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00							
			8 wctlog						
190 Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum Memo ***Use paint screws to mask inserts*** START TIME: 8:00 OVEN TEMPERATURE: 320 OF FINISH TIME: 8:30	0.00 0.00							
			(N) / M-L 4/05/10						
200 QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00							
			1 d M-L 4/05/10						

M116964

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Cust Item ID:

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Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

210

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

✓ 1- insert D3391-011 into D3391-13

✓ 2- insert T-pins into first and third fwd saddle holes

✓ 3- ON FIRST SIDE ONLY drill out 2nd and forth fwd saddles holes to 0.500" as per DSI 9364

✓ 4- remove T-pins and locate DT9415 from first and third crossbolt hole using T-pins and clekos

✓ 5- ON 2ND SIDE ONLY ream out 2nd and forth saddle hole to 0.499". Remove DT9415

✓ 6- deburr, re-alodine and blow out chips

✓ 7- press fit D3591-1 spacers using DT9416 starting from 0.500" side

1 of 11 4/6/10

220

0.00



QC

QC5- Inspect part completeness to step on W/O

Memo

0.00

Quality Control

S. W. Smith

W/O:		WORK ORDER CHANGES					
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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230 HandFinish Hand Finishing	HandFinishing Memo Install inserts	0.00 0.00				1	6	11	4/6/10
240 QC Quality Control	QC5- Inspect part completeness to step on W/O Memo Inspect thread of each insert using DT8821	0.00 0.00							8/10/10
250 HandFinish Hand Finishing	HandFinishing Memo Assemble as per dwg D3391	0.00 0.00				1	6	11	4/6/10

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Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

260

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

8 11/05/11

Quality Control

270

Identify as per dwg & Stock Location: W/O

0.00



Packaging

Memo

0.00

0412-742-041 / 1368635

1 0 11/05/10

Packaging

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

11/5/11

Quality Control

MCF

11-05-11

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Picklist Print

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Page 1

Work Order ID: 57351

Parent Item: D3391-013

Parent Item Name: Mid Tube Assembly

Start Date: 4/6/2010

Required Date: 4/20/2010

Comments: IPP A 05.12.13 New Issue EC
IPP B 06.02.09 Dwg rev.D EC
IPP Rev:06-03-28 Update Manufacturing Instructions JLM
IPP rev D 07.03.14 dwg Rev F EC

Start Qty: 1.00

Required Qty: 1.00

✓ AN960C10L Purchased No Each 0.0000 4.0000
washer
D3672-1 Manufactured No Each 1,589.000 10.0000
Phenolic Washer

(x4) 10/05/10

10/05/10

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST077

1589

47628

89

51674

500

52505

1000

x10

✓ D2500-1-100 Manufactured No

100

Each

122.0000

1.0000

Skidtube Extrusion

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

LG

122

37065

35

50251

87

1

10/4/13

D 3681-1 257656

x/2

BE 10/05/04

10.05.04

W/O:		WORK ORDER CHANGES					
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Required Date: 4/20/2010

Comments: IPP A 05.12.13 New Issue EC
IPP B 06.02.09 Dwg rev.D EC
IPP Rev:06-03-28 Update Manufacturing Instructions JLM
IPP rev D 07.03.14 dwg Rev F EC

Start Qty: 1.00

Required Qty: 1.00

✓ MS27039C4-08 Purchased No 100 Each 60.0000 4.0000
SCREW



HL 11/05/10

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST293

60

17831

60

Manufactured No

140

Each

0.0000

1.0000



B56724 ① 11/04/12

✓ D3391-011
Fwd Tube Assembly

✓ D3391-015 Manufactured No



160

Each

0.0000

1.0000



① 11-4-20

B62975

B68652

✓ Aft Tube Assembly
D3389-1

Manufactured No

210

Each

2.0000

1.0000



(K) HL 11/05/10



Web

Warehouse Loc Qty Loc Code
Location

Main Warehouse

LG

2

56813

2

B57353 ① 11/04/15

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Shop Packet Print

Page 2

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IPP B 06.02.09 Dwg rev.D EC
IPP Rev:06-03-28 Update Manufacturing Instructions JLM
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 4/6/2010

Required Date: 4/20/2010

Start Qty: 1.00

Required Qty: 1.00

✓ ALS4-1032-225 Purchased No 230 Each 7,729.000 10.0000



Insert

MA on w/b 56724

Warehouse Loc Qty Loc Code
Location

Main Warehouse

PK011

7729

110768

7729

✓ ALS4-428-165 Purchased No 230 Each 143.0000 4.0000



Inserts



24 11/05/10

Warehouse Loc Qty Loc Code
Location

Main Warehouse

FP

43

6989

43

Main Warehouse

ST282

100

114172

100

✓ D3591-1 Manufactured No 230 Each 5.0000 2.0000



Bushing



x4

all 11/05/10

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST072

5

47121

5

1357350

on w/b 56724 x2

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IPP B 06.02.09 Dwg rev.D EC
IPP Rev:06-03-28 Update Manufacturing Instructions JLM
IPP rev D 07.03.14 dwg Rev F EC

Start Qty: 1.00

Required Qty: 1.00

✓ ALS4-1032-130 Purchased No 250 Each 40.0000 26.0000



26 11/05/10

Insert

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST282

40

110511

40

11117331

✓26

✓ AN3C4A Purchased No 250 Each



1,249.000 10.0000



1 26 11/05/10

BOLT

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST350

1249

113226

248

114103

501

114108

500

11117313

✓10

✓ AN960C10L Purchased No 250 Each



0.0000 10.0000



610 26 11/05/10

washer

11117291

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IPP Rev:06-03-28 Update Manufacturing Instructions JLM
IPP rev D 07.03.14 dwg Rev F EC

Start Qty: 1.00

Required Qty: 1.00

✓ AN960C416L Purchased No 250 Each 1,280.000 4.0000



WASHER NAS 1149C0 43212



221 1105110

Warehouse Loc Qty Loc Code
Location

OFFSHORE

FG 44

1116900

44

104925 44

Main Warehouse

ST346 1236

112612 336

112794 500

112828 400

✓ D3401-041 Manufactured No 250 Each 25.0000 1.0000



Tow Cap Assembly



221 1105110

Warehouse Loc Qty Loc Code
Location

Main Warehouse

FP 25

36216 1

41931 2

46029 12

50316 10

N/A

04 110 56724

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, April 06, 2010 8:23:04 AM

Work Order ID: 57351



Parent Item: D3391-013



Parent Item Name: Mid Tube Assembly

Start Date: 4/6/2010

Required Date: 4/20/2010

Comments: IPP A ☐ 05.12.13 ☐ New Issue ☐ EC
 IPP B ☐ 06.02.09 ☐ Dwg rev.D EC
 IPP Rev:06-03-28 Update Manufacturing Instructions JLM ☐ ☐
 IPP rev D 07.03.14 dwg Rev F EC

Start Qty: 1.00

Required Qty: 1.00

✓ D3564-13 Manufactured No 250 Each 27.0000 1.0000

 Wearshoe

Warehouse Loc Qty Loc Code

Location

Main Warehouse

FP

9

1366136

56285

9

Main Warehouse

FP17

18

56533

18

✓ D3566-13 Manufactured No 250 Each 58.0000 1.0000

 Gasket

Warehouse Loc Qty Loc Code

Location

Main Warehouse

FP

58

1366550

53461

58

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

Tuesday, April 06, 2010 8:23:04 AM

Page 7

Work Order ID: 57351



Parent Item: D3391-013



Parent Item Name: Mid Tube Assembly

Start Date: 4/6/2010

Required Date: 4/20/2010

Comments: IPP A 05.12.13 New Issue EC
IPP B 06.02.09 Dwg rev.D EC
IPP Rev:06-03-28 Update Manufacturing Instructions JLM
IPP rev D 07.03.14 dwg Rev F EC

Start Qty: 1.00

Required Qty: 1.00

✓ D3672-1 Manufactured No 250 Each 1,589.000 4.0000



Phenolic Washer



all 4/05/10

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST077 1589

47628 89

51674 500

52505 1000

✓ D3672-3 Manufactured No 250 Each 514.0000 4.0000



Phenolic Washer



all 4/05/10

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST077 514

51596 6

55560 508

✓ MS27039C1-09 Purchased No 250 Each 66.0000 4.0000



SCREW



all 4/05/10

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST293 66

17831 66

all 4/05/10

Tuesday, April 06, 2010 8:23:04 AM

Shop Packet Print

Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

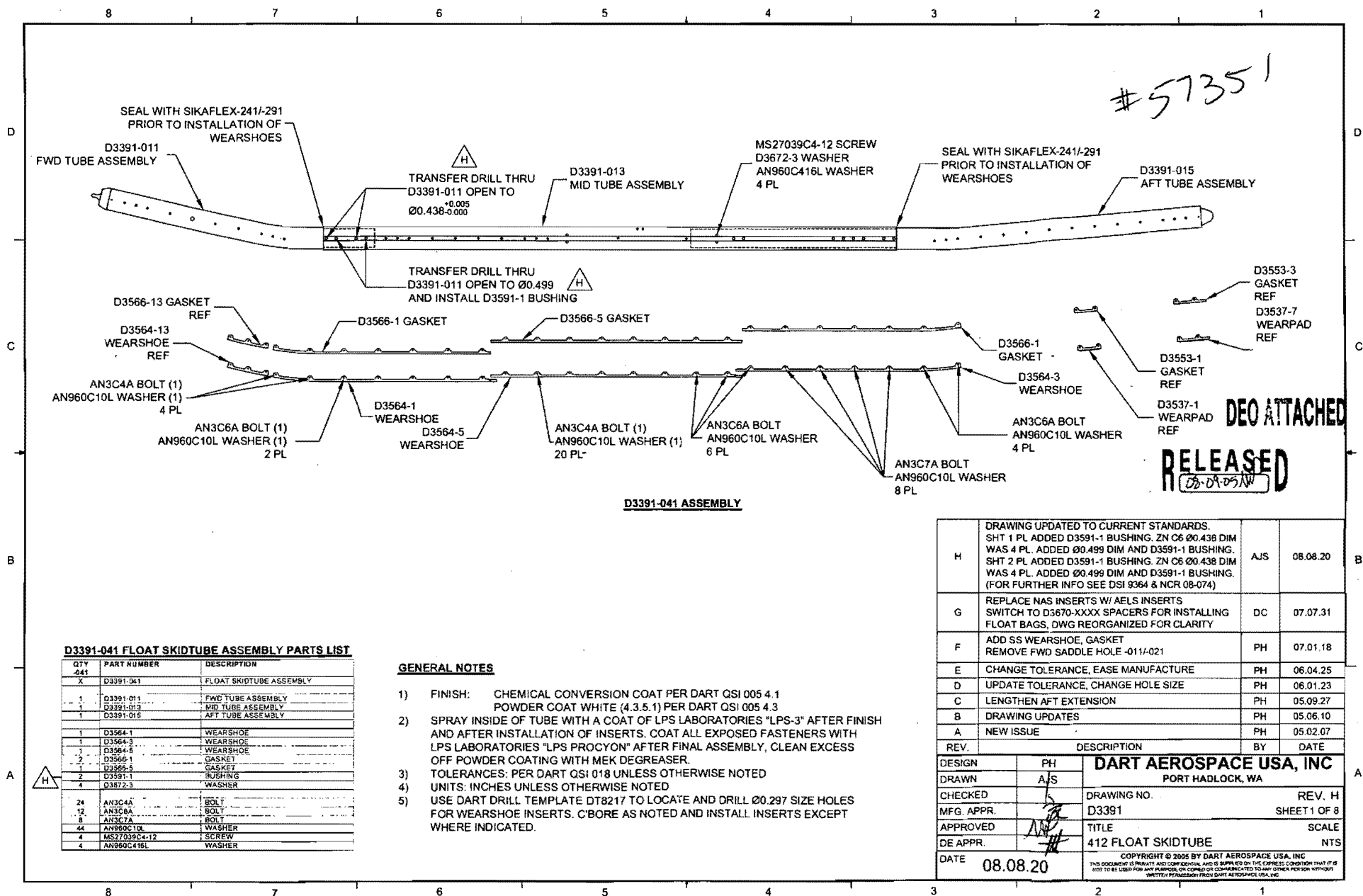
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

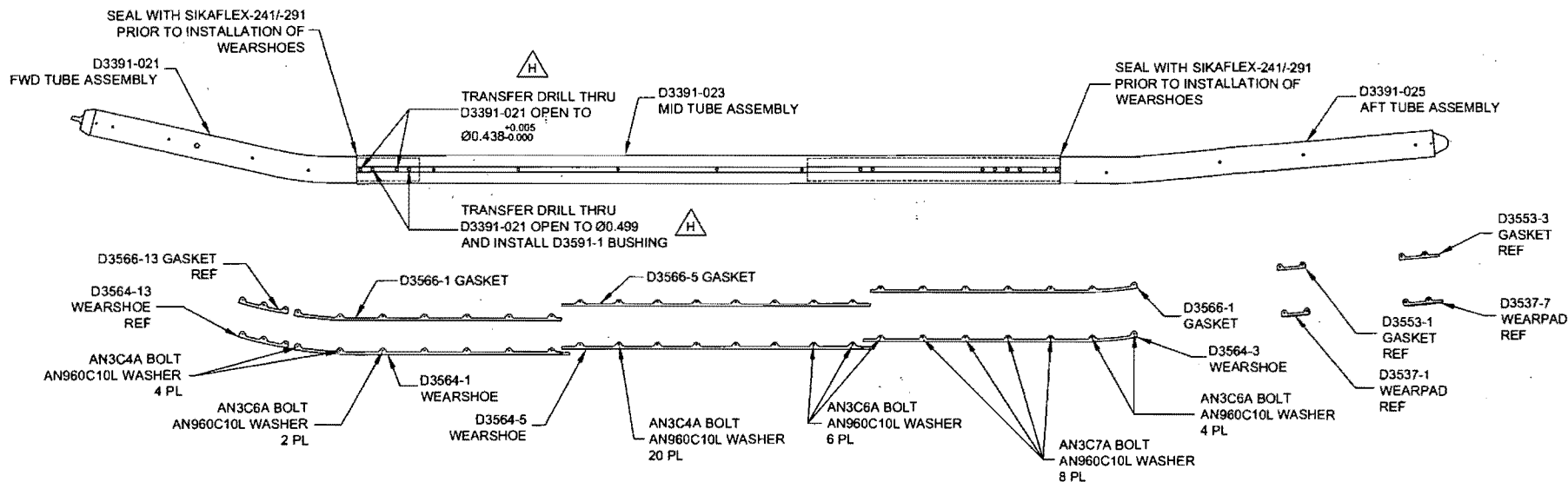
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

#57351



D3391-043 ASSEMBLY

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-5	WEARSHOE
1	D3564-13	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3566-13	GASKET
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY. CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

DEO ATTACHED

RELEASED
08-09-2008

DART AEROSPACE USA, INC		
DESIGN	PH	PORT HADLOCK, WA
DRAWN	AUS	
CHECKED		DRAWING NO.
MFG. APPR.		D3391
APPROVED		TITLE
DE APPR.		412 FLOAT SKIDTUBE
DATE	08.08.20	SCALE
		NTS

REV. H
SHEET 2 OF 8
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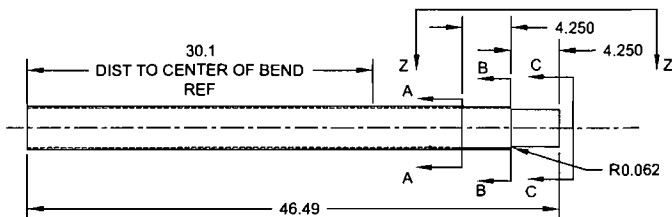
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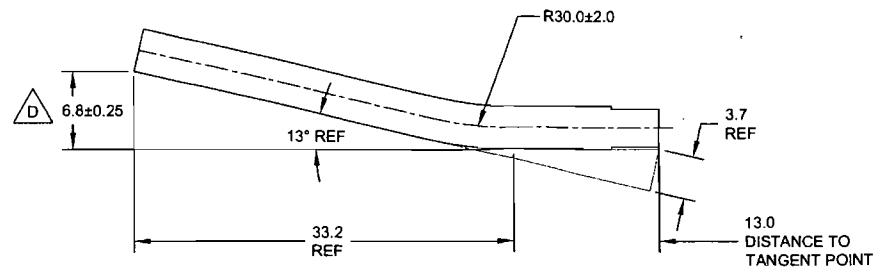
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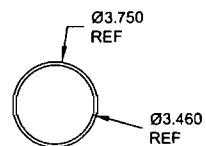
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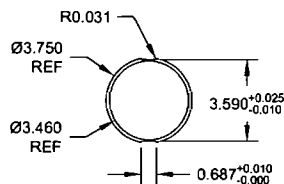
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



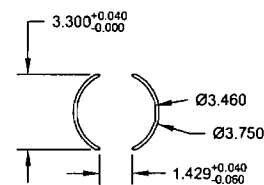
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



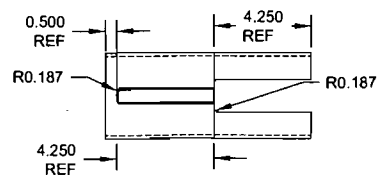
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X



VIEW Z-Z
SCALE 2X

#57351

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28 JAN 05

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MFG. APPR.		D3391	SHEET 3 OF 8
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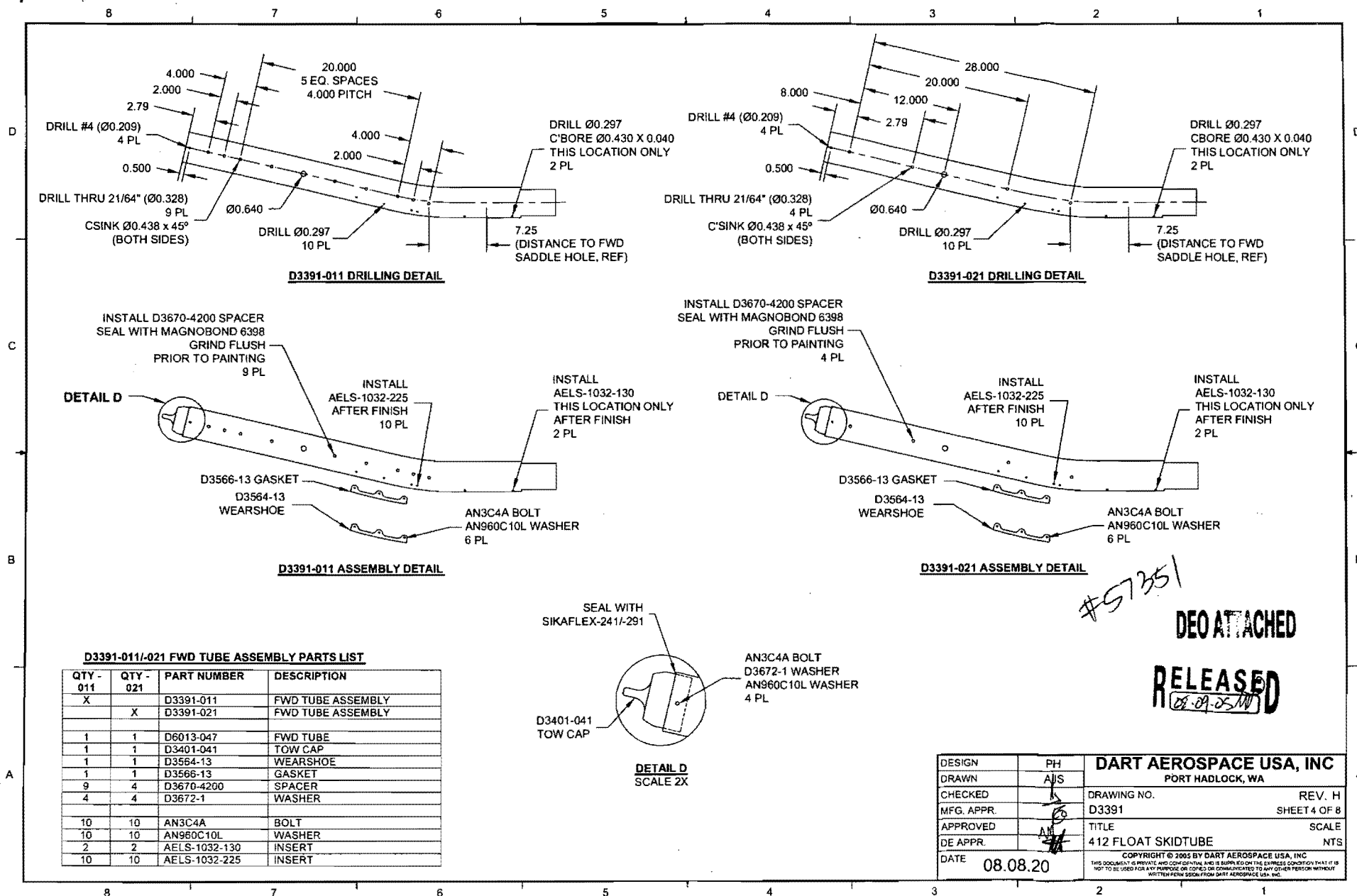
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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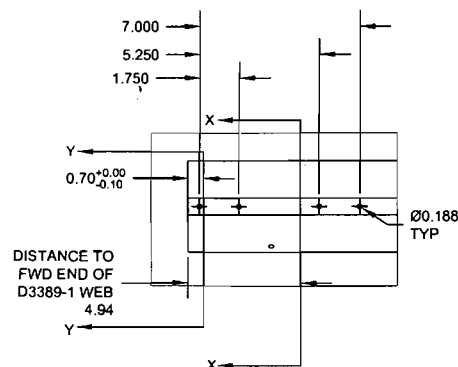
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

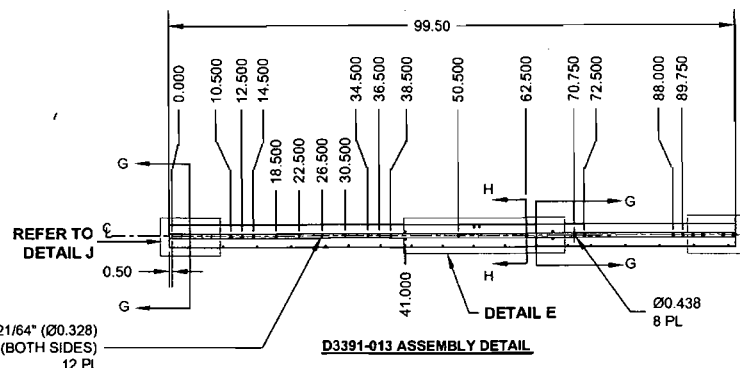
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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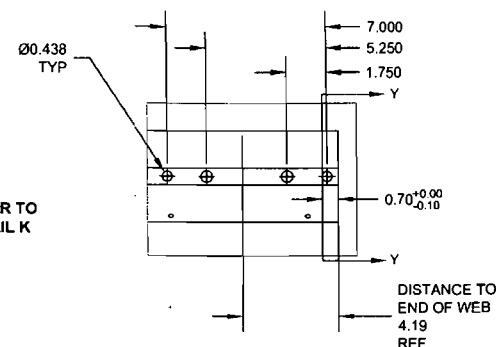
DETAIL J
SCALE 4X

DRILL THRU 21/64" (Ø0.328)
CSINK Ø0.438 X 45° (BOTH SIDES)
12 PL



D3391-013 ASSEMBLY DETAIL

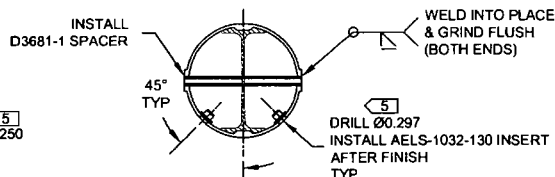
REFER TO
DETAIL K



DETAIL K
SCALE 4X

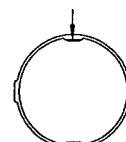


SECTION G-G
SCALE 5X



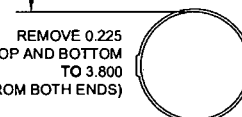
SECTION H-H
SCALE 5X

REMOVE 0.030
FROM TOP AND BOTTOM
TO 3.610



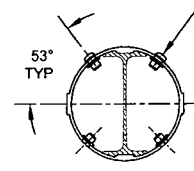
SECTION X-X
SCALE 5X

REMOVE 0.225
FROM TOP AND BOTTOM
TO 3.800
(0.7 FROM BOTH ENDS)



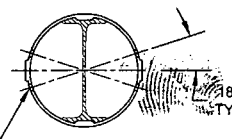
SECTION Y-Y
SCALE 5X

DRILL Ø0.297
INSTALL AELS-1032-130 INSERT
MS27039C1-08 SCREW
D3672-1 WASHER
AN960C10L WASHER
AFTER FINISH
4 PL



SECTION M-M
SCALE 5X

DRILL Ø0.250
4 PL



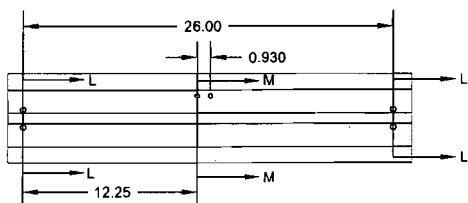
SECTION LL-LL
SCALE 5X

D3391-013 MID TUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
-013		
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW

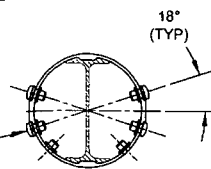
D3391-013 MID TUBE ASSEMBLY

- MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- WELDING: PER DART QSI 004



DETAIL E
SCALE NONE

DRILL Ø0.391
INSTALL ALS4-428-165 INSERT
MS27039C4-08 SCREW
D3672-3 WASHER
AN960C416L WASHER
AFTER FINISH
4 PL



SECTION L-L
SCALE 5X

DEO ATTACHED

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DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 5 OF 8
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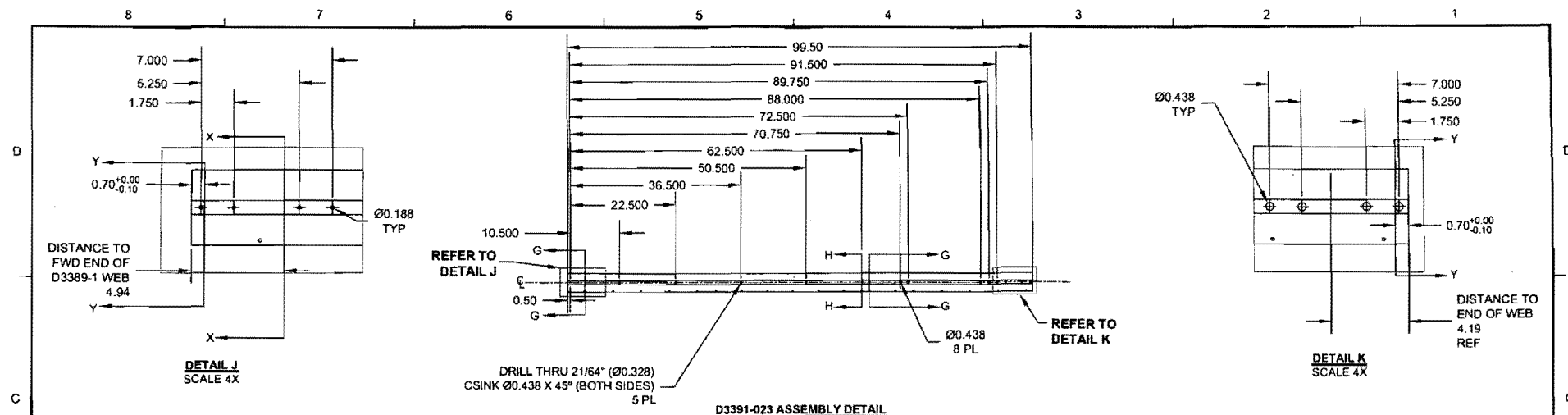
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

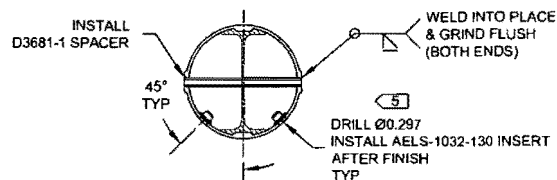
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

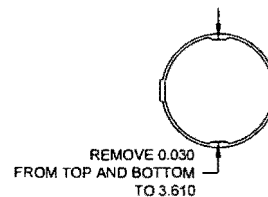
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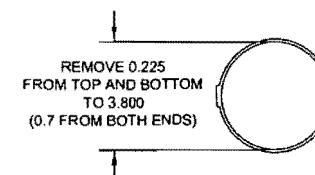
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY -	PART NUMBER	DESCRIPTION
023		
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004

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CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 6 OF 8
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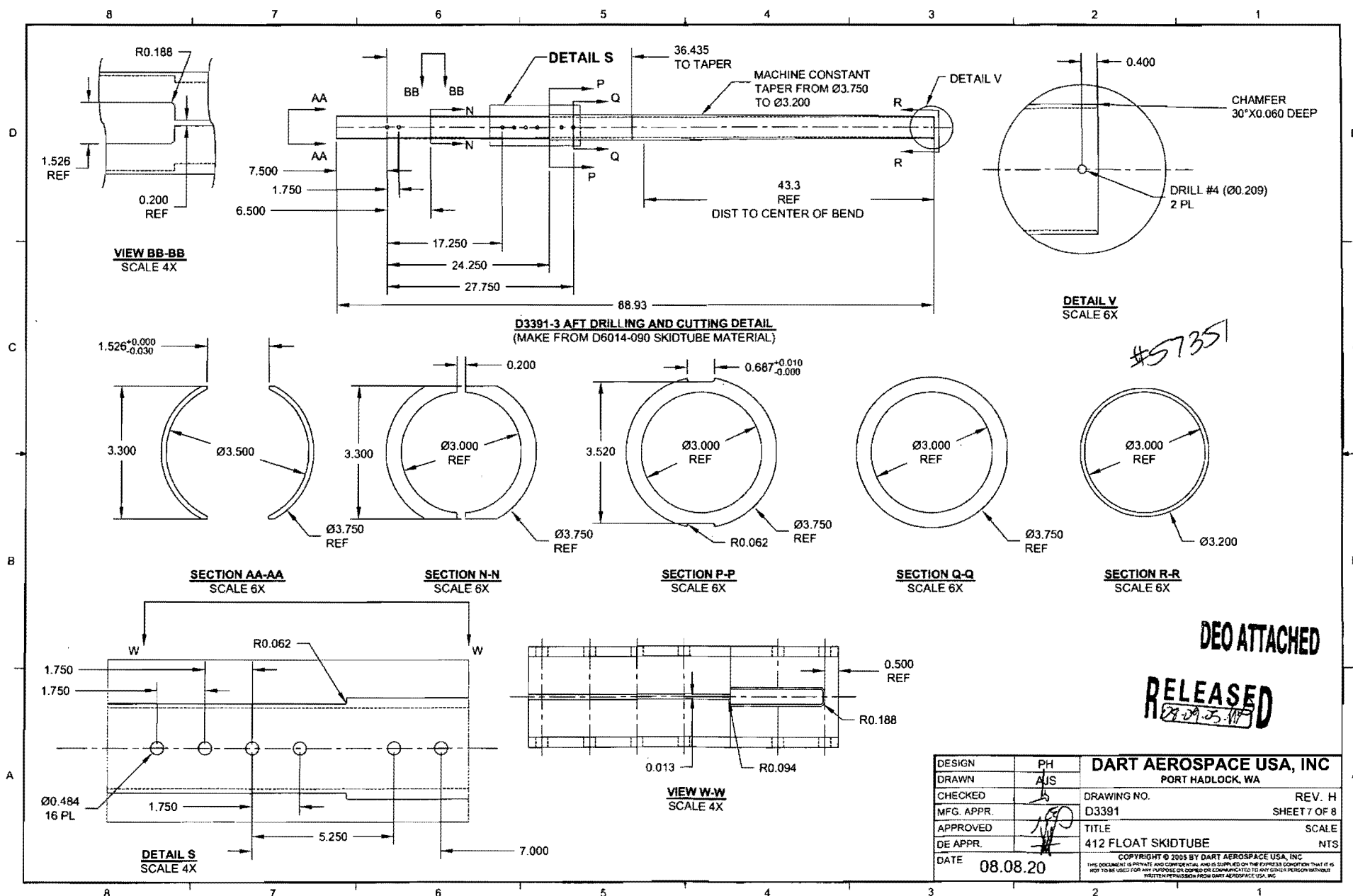
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries



DEO ATTACHED
RELEASED
08-09-05-117

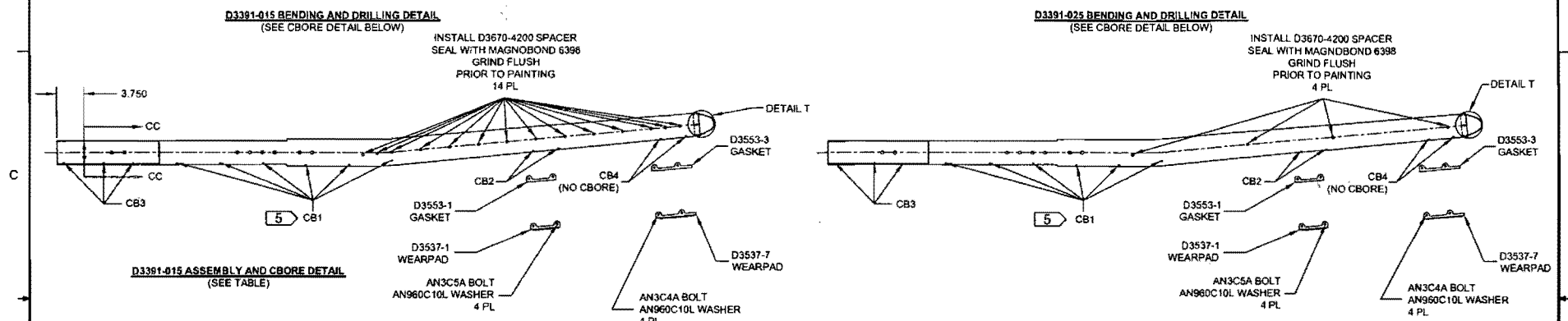
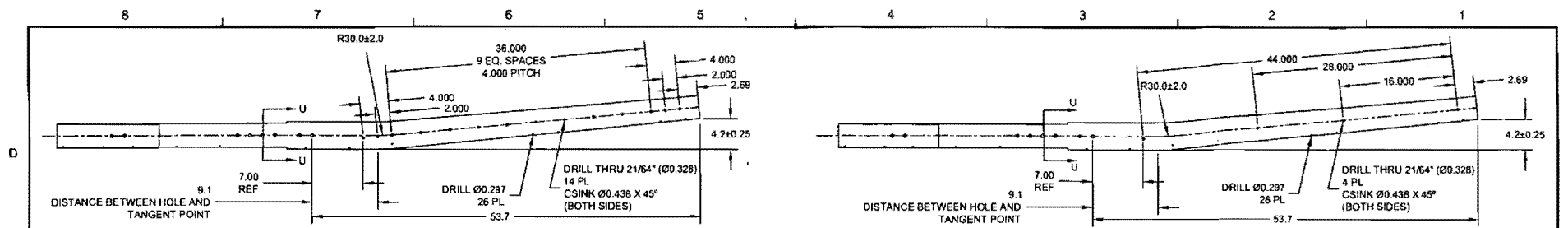
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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NOTE: Date & initial all entries

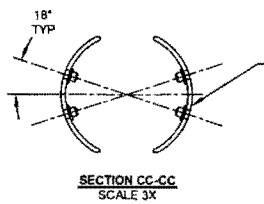
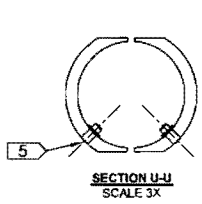


D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST

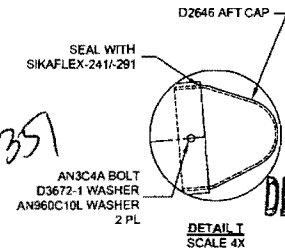
QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X		D3391-015	AFT TUBE ASSEMBLY
	X	D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4		ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER

CBORE HOLES MARKED CB1-CB4 AS FOLLOWS AND INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY D3391-015	QTY D3391-025	CBORE	P/N
CB1	12	12	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130



DRILL Ø0.391
CBORE Ø0.516 X 0.040 DEEP
INSTALL ALS4-428-165 INSERT
4 PL



#57351

RELEASED
08-09-05 MJD

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 8 OF 8
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DRAWING NO. D3391	TITLE 412 FLOAT SKIDTUBE	REV. H	DART AEROSPACE USA, INC ENGINEERING ORDER		D.E.O. NO. D3391-H-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN UP	CHECKED h	MFG. APPR. AA	APPROVED MP		DE APPR. H		
DATE 09.09.23	DATE 04.04.24	DATE 09/09/25	DATE 09/09/30		DATE 09/09/30		

PURPOSE:

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/-043 SKIDTUBES.

CHANGE:

AMEND NOTE 2 OF D3391-041/-043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

- 2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH~~
~~AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH~~
 LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS
 OFF POWDER COATING WITH MEK DEGREASER.

RELEASED
 2010-02-02

MP

#57351

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 7250

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 62679
Part number: D3391 - 023
Description: 3391
Welding Process: Tig ☒ Mig ☐
Base material: _____
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐
Undercut: pass ☒ fail ☐
Pin holes: pass ☒ fail ☐
Overlap (cold lap): pass ☒ fail ☐
Porosity (surface): pass ☒ fail ☐
Coloration: pass ☒ fail ☐

Qualifier: J. Evans Date of Test Coupon 11-04-28
Welder: Barclay Elliott Date of Test Coupon 11-04-28

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

